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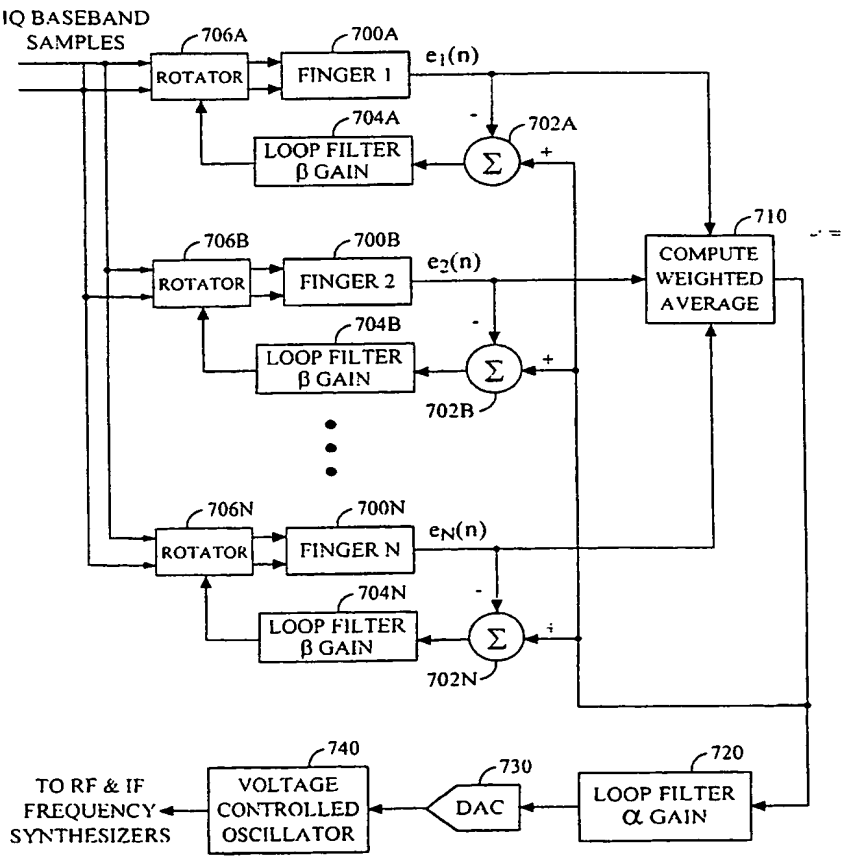
(54) Title: MULTIPATH DOPPLER-ADJUSTED FREQUENCY TRACKING LOOP




(57) Abstract: A novel and improved method and apparatus for frequency tracking is described. Two main sources of error that contribute to the frequency difference between locally generated carriers and those used to modulate received signals include frequency offset between the two timing sources and doppler effects due to relative movement between the sources. The present invention provides a tracking mechanism for removing the effects of error due to frequency offset as well as compensation for frequency error due to doppler in a plurality of multipath signals. Each finger (700a..700n) of a RAKE receiver utilizing the present invention will compute a frequency error for that finger. The weighted average of all of these frequency errors is calculated (710) and filtered (720) to provide a control signal for varying the frequency of IF and RF frequency synthesizers, accounting for the common frequency offset seen at each finger. Additionally, each finger is equipped with a rotator (706a...706n) for providing frequency adjustment specific to that finger. The frequency of each finger is adjusted through feedback of the frequency error finger.

WO 01/59937 A3

patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

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A. CLASSIFICATION OF SUBJECT MATTER
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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, INSPEC, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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1

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